REMARKS

Reconsideration and allowance of the present application are respectfully requested. Claims 1-42 remain pending in the application. By this Amendment claims 1, 19, 22, 31 and 34 are amended.

Applicants acknowledge with appreciation the indication in numbered paragraph 9 of the Office Action that claims 4-9, 11-14, 24-26, 28, 36, 37 and 39 contain allowable subject matter. In response, Applicants have broadly restated and incorporated the subject matter of a music piece being "classified based on at least one of frequency vibrations and spectral peak tracks" in the music piece, as variously recited in independent claims 1, 19, 22, 31 and 34. Applicants respectfully submit that claims 1-42 are now in condition for allowance.

In numbered paragraph 3, page 2 of the Office Action, independent claims 1, 31 and 34, along with various dependent claims, are rejected as being unpatentable over U.S. Publication No. 2002/0147728 (Goodman et al.) in view of U.S. Publication No. 2005/0075863 (Jiang et al.). In numbered paragraph 4, page 6 of the Office Action, dependent claims 3 and 35 are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of U.S. Patent 4,015,087 (Stewart). In numbered paragraph 5, page 7 of the Office Action, dependent claims 15-18 and 40-42 are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of U.S. Patent 6,434,520 (Kanevsky et al.). In numbered paragraph 6, page 8 of the Office Action, independent claims 19 and 22, along with various dependent claims, are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of the Kanevsky et al. patent.

In numbered paragraph 7, page 13 of the Office Action, dependent claim 23 is rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication and Kanevsky et al. patents, and further in view of the Stewart patent. These rejections are respectfully traversed.

Applicant has disclosed a method and system for automatic classification of music (e.g., paragraphs [0029] and [0030]). A received music piece can comprise a segment of a musical work; an entire musical work, such as a song; or a combination of musical segments and/or songs (e.g., paragraph [0030]). The received music piece is labeled as singing music or instrumental music, based on whether human singing voice is present (e.g., paragraph [0031]). Any number of classes of music pieces and hierarchical structure of the music pieces can be selected for controlling the classification process (e.g., paragraph [0029]). As exemplified in Fig. 2, a music piece 200 can be typed as an instrumental 202 music piece, and can be further classified as an instrument classification 212. A labeled singing music piece can be classified based on at least one of frequency vibrations and spectral peak tracks in the singing music piece (e.g., paragraphs [0037] and [0038]).

The foregoing features are broadly encompassed by Independent claim 1, which recites, among other features, determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing music is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece. Independent claims 22 and 34 similarly recite determining a music type based on a detection of human singing by analyzing a

waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type..., wherein the music piece labeled as singing music is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece. Independent claim 19 recites selecting parameters for controlling the classification of a music piece, wherein the selected parameters establish a hierarchy of categories for classifying the music piece into at least a music type having specific categories; and determining, in a hierarchical order and for each selected category, when the music piece satisfies the category by analyzing a waveform of the music piece comprising a composite of music components, a music piece being classified based on at least one of frequency vibrations and spectral peak tracks in the music piece. Independent claim 31 recites means for classifying received music piece based on selected categories, wherein the music piece is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece.

The Goodman et al. publication discloses utilizing metadata for each track to build hierarchical database of tracks (paragraphs [0053] and [0057]). However, the Goodman et al. publication does not relate to determining a music type based on waveform analysis. The Examiner admits at page 3 of the Office Action that "Goodman et al. do not mention expressly: determine a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components." Further, the Goodman et al. publication does not relate to classifying and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing is classified based on at least one of frequency vibrations and spectral peak tracks in the music

piece, as recited in claim 1. Rather, the Goodman et al. publication merely discloses classification of an audio signal 106 as either a) speech, or b) other audio by analyzing segmented information 110 (paragraph [0024]). At least for these reasons, Applicants respectfully submit that the Goodman et al. publication would not have taught or suggested labeling the received music piece as instrumental music when the analyzed waveform is not determined to comprise human singing; and classifying and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing music is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece, as recited in claim 1, and as similarly recited in claims 22 and 34. Claims 19 and 31 broadly recite like features for classification of a music piece.

The Jiang et al. publication, considered individually or in combination with the Goodman et al. publication, the Stewart patent and/or the Kanevsky et al. patent, does not cure the deficiencies of the Goodman et al. publication. The Jiang et al. publication does not relate to classifying a music piece based on a hierarchy of music classification categories, wherein the music piece is classified and labeled into a specific category of a determined music type. Rather, the Jiang et al. publication relates to analysis of an "audio signal 106," and merely mentions "audio signal" classification into speech, non-speech, silence, environment sound, music, music with vocals, and music without vocals" (paragraph [0023]). The Jiang et al. publication would not have taught or suggested labeling the received music piece as instrumental music when the analyzed waveform is not determined to comprise human singing; and classifying and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing music is

classified based on at least one of frequency vibrations and spectral peak tracks in the music piece, as recited in claim 1, and as similarly recited in claims 22 and 34. Claims 19 and 31 broadly recite like features for classification of a music piece.

The Stewart et al. patent, considered individually or in combination with the Goodman et al. publication, the Jiang et al. publication and/or the Kanevsky et al. patent, does not cure the deficiencies of the Goodman et al. publication. The Stewart patent was applied for its disclosure of spectrographic displays for analyzing speech signals (e.g., col. 1, lines 13-16 and 61-68; and col. 10, lines 21-38). However, the Stewart et al. patent would not have taught or suggested labeling the received music piece as instrumental music when the analyzed waveform is not determined to comprise human singing; and classifying and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing music is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece, as recited in claim 1, and as similarly recited in claims 22 and 34. Claims 19 and 31 broadly recite like features for classification of a music piece.

The Kanevsky et al. patent, considered individually or in combination with the Goodman et al. publication, the Jiang et al. publication and/or the Stewart patent, does not cure the deficiencies of the Goodman et al. publication. The Kanevsky et al. patent was applied for its disclosure of indexing segments of audio data file for storage in a database in accordance with identification tags of verified speakers (col. 1, lines 54-56). However, the Kanevsky et al. patent would not have taught or suggested labeling the received music piece as instrumental music when the analyzed waveform is not determined to comprise human singing; and classifying

and labeling the music piece into a specific category of the determined music type, wherein the music piece labeled as singing music is classified based on at least one of frequency vibrations and spectral peak tracks in the music piece, as recited in claim 1, and as similarly recited in claims 22 and 34. Claims 19 and 31 broadly recite like features for classification of a music piece.

Even if considered in the various combinations as suggested by the Examiner, the Goodman et al. publication, the Jiang et al. publication, the Stewart patent and/or the Kanevsky et al. patent do not teach or suggest the recited claim features.

For the foregoing reasons, Applicant's claims 1, 19, 22, 31 and 34 are allowable. The remaining claims depend from the independent claims and recite additional advantageous features which further distinguish over the documents relied upon by the Examiner. As such, the present application is in condition for allowance.

All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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